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THE HUMAN PREDICAMENT: A WAY OUT?

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A major problem with the human brain — as well as an asset — is its great capacity to become adapted or habituated to whatever life conditions surround it. Young people growing up in today's frenetic, overcrowded, crime-ridden, polluted bumper-to-bumper world with its growing nuclear and terrorist threats may easily come to view the modern world's ills as simply facts of life to be accepted. Those of us, however, who can look back with three-score or more years' hindsight get a definite impression (abundantly backed by hard mathematical evidence) that things today are not what they should or could be. Humanity seems to be trapped in a vast network of adverse social forces in which we become more deeply ensnared year by year. This, of course, is the modern ENEMY. It is a self-feeding growing juggernaut of inexorable forces from which today there appears to be no means of escape — no 'way out.' Some people begin to say that only a devastating catastrophe such as a nuclear war or global famine can be the answer and provide a fresh start. By contrast the solution we here envision appears to offer a relatively reasonable, non-catastrophic, even humane answer.

We start from some preliminary assumptions with which most people generally agree: Firstly, that today's global crises are all man-made and are essentially products of human-value priorities; and secondly, that these problems have no technological solutions. Despite short-term benefits, technical advances in the absence of population controls tend in the long run to increase the magnitude of the problem. In other words, the enemy network of adverse social forces just loves to see 'technical advances.' It feeds and thrives on them and grows ever more voracious.

Rather than rely on more and more technology, we look instead into human nature for the underlying root causes of our current world problems. Taking for granted that not much can be done, directly at least, about Mankind's fixed, innate or genetic traits, we narrow our focus to center on those acquired or cultural aspects of human nature and their embodied products in the social structure. These differ in different peoples and periods, are learned by each generation and are, in theory at least, subject to remedial adjustments.

The overall strategy and logic are simple enough. All we have to do is replace existing social priorities with others that are more adaptive and more conducive to preserving and improving our world instead of destroying it. Agreement in principle usually comes easily up to this point, i.e., that there is no technological fix for our worsening predicament and that only an adaptive overhaul in the existing social and moral order can be counted on to correct the root causes of our world situation and secure a sustainable civilization. This, of course, leaves the big questions remaining: first, the nature of the adaptive reforms needed, and second — if these can be determined — how they can be implemented in practical concrete terms.

New Ideology And A Global Ethic

Skipping ahead now we jump directly to the conclusion, where we see some genuine hope for all nations and all peoples in the form of a new ideology and/or "global ethic" that promotes value priorities of the kind needed. Following recent developments in the paradigms of science we arrive at a common-denominator value-belief system founded in the neutral universality and credibility of science. More precisely, it is founded in the revised worldview and truth of the new mentalist paradigm of science — to be explained as we proceed.

This is not an 'off-the-cuff' or 'top-of-the-head' conclusion, but a 15-year conviction, with firm bases in mind-brain and value theory — a conviction that has continued to grow stronger with time. Most people familiar with the envisaged ideology agree that it should logically, if accepted worldwide, provide an effective remedy for correcting current disaster trends. The reformed value priorities will bring changes in social policy, decision-making, legislation, etc. This will happen, however, only IF (and this, of course, is the big problem) if it could ever be instituted soon enough.

Any possibility of actually implementing the kinds of worldwide value reforms needed to turn the tide of worsening world conditions may seem at present totally unrealistic — little more than a paper-and-pencil ivory-tower fantasy. The reason I venture even to mention it here is because firstly, the alternatives which lie ahead make any thinkable, non-catastrophic answer worth pursuing a little, but mainly, because all of the required reforms, and revisions in world perspectives, beliefs, and ideology are already called for anyway by recent developments in science.

The developments, specifically, are those of the so-called 'consciousness' or 'cognitive' revolution of the 1970s in the mind-brain and behavioral sciences. This is also referred to variously as the 'mentalist,' 'humanist,' or 'third' revolution. In other words, what follows can be viewed very largely as an examination of the consequences and implications of a recent shift in scientific paradigm, the extensions and repercussions of which are still in process. The shift is that from the rigorously objective Behaviorism that had dominated psychology for half a century to the New Mentalism or Cognitivism of the past decade. The central feature is a radical about-face concerning the scientific status and treatment of consciousness. Involved are new insights on the fundamental relation of mind to brain as well as a deep conceptual turnabout in scientific interpretation, outlook and worldview.

Thus, those purists who prefer can forget about 'human destiny,' the 'fate of the planet,' the 'world of our children's children', or any kind of social applications. The issues raised are pertinent in their own right, here and now, from the standpoint of contemporary science alone. However, it is also equally if not more critical from the standpoint of the humanities and a liberal-arts education — not to mention the general ongoing concern of each of us about what is true and false, right and wrong and so on. In short, it addresses the question, What does modern science leave for anyone to believe in?

Principally at issue is the validity of the standard scientific explanations of life and nature, especially human nature, and whether these scientific descriptions are more valid than are the very different descriptions traditionally expressed in the humanities. As we proceed it will become evident that the new outlook established in the consciousness revolution supports to a large extent the humanist views as opposed to the traditional reductive scientific interpretations.

Scientific Framework for Belief

The reasoning, observations and sequence of developments behind these summary statements can be outlined briefly as follows: The modified interpretations of brain as related to consciousness upheld in the 'cognitive revolution' profoundly transform scientific concepts of both human and non-human nature. The revisions include our understanding of the kinds of forces that are in control — i.e., the forces that move and govern the brain and the cosmos and created Man. The outcome is a changed scientific view of ourselves and reality, a new conceptual model for science. Our new model includes subjective values, consciousness, purpose, and other subjective attributes as causal forces, rather than excluding them as behaviorist and materialist doctrine. This new model also includes the rich qualitative properties inherent in all entities at all levels throughout nature. These higher, more evolved qualities become recognized in their own right and form rather than being reduced to quantum physics or any other ultra element or energy.

Taken as a framework for belief, the new outlook represents a position intermediate between dualistic mystical schemes on the one side and scientific materialism on the other. The physical and the mental, along with other paradoxical opposites such as subjective and objective, freedom and determinism, fact and value, become combined and reconciled within a single unifying view of mind, brain, Man and nature. A scientific this-world foundation for values and meaning emerges which promotes an ultimate concern for the evolving quality of life. With this revised outlook the most sacred things in life are neither reduced or quantum physics nor set off in some realm of existence. The forces that move the universe and created Man are retained as foundations for ethical and moral priority, but are conceived in holistic, this-world terms. The ultimate criterion for

what is morally right and good, works out to be, simply, that which serves in the long run to preserve and enhance the evolving quality of this-world existence.

It is along such lines that the changed mind-brain concepts and their ramifications lead to a new ideology and "global ethic" as referred to at the outset. The emergent this-world framework for ethics makes it immoral to devaluate this world or this life by treating them as merely a way station to something better beyond. To degrade in any way the quality of the biosphere for coming generations is not only foolhardy, but becomes unethical, and, in a sense, even sacrilegious.

Among the consequences of the cognitive revolution, it is obvious that (a) the **humanities** get a strong, long-overdue boost. At the same time (b) the image and contributions of **science** become elevated to include a role in determining values. (c) The growing chasm of culture between scientists and nonscientists engendered in a fundamental conflict of worldview disappears, to become little different from that which exists between remote sciences. (d) The interrelation of science and values long denied in principle by both ethicists and scientists, enters a new era of acceptance. (e) No longer is it a logical necessity that scientific and religious belief be kept in separate 'mutually exclusive realms of human thought.'

The turnabout in the outlook and worldview of science on which these various developments rest, is itself dependent on a revised concept of causation referred to here as 'macro-determinism.' It is also referred to as 'downward causation' or 'emergent interaction.' The downward control concept is especially critical in reference to the control exerted by the mental over the neuronal. Since the mid-1970s the idea of the downward control of the mental over the physico-chemical in brain processing has gained the support of the majority doctrine in behavioral and cognitive science. The causal principle is universal, however, and is today spreading also into neuroscience, social science, anthropology and, here and there, into philosophy and the humanities. But unfortunately, so far it has yet to make any substantial penetration into physics, chemistry or microbiology — at least at Caltech. In the hard sciences the change has little or no effect on techniques and methodology. The downward-control principles involved have always been incorporated automatically in the classical laws of physics, chemistry, biology, geology and so on, and though hidden and largely unrecognized, they become tacitly taken for granted in practice.

Downward Control or "Macro-Determinism"

What it all boils down to is a changed understanding in scientific theory about which entities control which. In particular, it addresses the hierarchy of command which exists among the forces within forces involved in brain function, behavior, and — the universe at large. For many decades science has been telling us that we live in a strictly physically driven cosmos, governed ultimately by quantum mechanics (or some other even more elemental unifying physical field 'theory of everything' yet to be discovered). Science, on these terms, leads us to conclude that there is no purpose in our world, no value, no choice, no dignity, freedom, or higher meaning, and, of course, no moral priorities. For these you have to look in some other 'supernatural' or 'epiphenomenal' realm of existence that science traditionally has rejected. In the world of conventional science, "No physical action waits on anything but another physical action."

Our new outlook, on the other hand, says "NO, not true," claiming (a) that the MENTAL or SUBJECTIVE properties of brain processes are just as real and causally operative in brain function as those of nerve cells, atoms and molecules; (b) that the mental properties and human psyche do **not** reduce to quantum physics; and (c) that the higher mental powers in the brain exert a downward causative control over the lower neuronal and molecular events. Science in the past has emphasized the role played by the brain's physicochemical processes in determining the nature and course of conscious subjective experience. At the same time it has rigorously denied that the course of these physicochemical events in brain processing is in any way altered or influenced by the subjective conscious qualities and properties of inner mental experience.

In direct reversal of this earlier thinking, the new outlook upheld in the cognitive revolution contends that molecular events in the brain — i.e., when, where and how they occur — are determined by the higher laws and dynamics of **mental** programming. This is similar to the way the flow of electrons to a television screen is controlled by the programming on different channels, or a software program controls the electronic activity in a computer without interfering with the physical laws at the lower levels. Throughout nature this same thinking applies. In the brain it's a matter of the higher **mental** programs determining the timing of the lower **neuronal** activation, but the principle is universal, applying everywhere to the 'interaction' between any whole and its parts.

Until the 1970s science traditionally emphasized the control exerted by the parts in determining the properties and actions of any whole but neglected to similarly recognize the simultaneous reciprocal control exerted downward by the whole on its parts. The result has been a great error not only in science but also in philosophy and to some extent in the humanities. Modern human thinking generally has tended to follow science in accepting an atomistic, materialist or (the current term) 'microdeterminist' view of life, mind and the world. The repercussions and ramifications of this error in the areas of human values and beliefs, and ultimately on human decision-making and the course of sociocultural developments of the past century has been enormous. In no small measure, the human condition as we see it today can be traced to this error in the perception of reality and its direct and indirect consequences in the realm of belief and values. The formula we propose here for reversing global disaster trends involves in the main a correction of this basic error and its social consequences.

Under the new 'downward control' or 'macro-determinist' terms it follows that the higher vital and mental forces along with the human and social forces embodied for example in politics, education, religion, industry, etc. and designed traditionally to lie in the province of the humanities and social sciences, are all just as causally powerful from the standpoint of science as are the forces dealt with in physics, chemistry and molecular biology. What is more, these higher forces are much more relevant for the major problems of our times.

Finding Our Way Out

In closing, we return to the human predicament and world problems, particularly those of world peace. Someone has calculated that France now has a sufficient stockpile of nuclear arms to blow up most of the United States. However, we in the U.S. don't worry about France. It is mutual fear and distrust that mostly generate world tensions and these can be traced in no small measure, like other root causes of worsening world conditions, to different people's conflicting and often intolerant, value-belief differences.

Whereas in the past science did little, if anything, to remedy this situation and in some ways made things worse, our reformed 'macro-determinist' science that includes consciousness and subjective values would go far, along with its humanistic implications, to help resolve the deep ideologic differences that now divide the Free World and Communist countries. It provides common universal ethical foundations on which all nations could work to build a World Government or at least a World Security System to help control nuclear developments and other global threats that require international collaboration.

As a solution to world-disaster trends, the new paradigm of science and the reformed values and beliefs it is promoting remains an answer on paper only. Even if it were all it is claimed to be, including a cure for global ills, the key to quality survival and the way of the future, it is purely academic so long as it remains an answer in theory only, that is not implemented. The very nature of the proposed answer requires that it gain recognition and acceptance throughout the world on a scale sufficient to sway governmental policy, decision-making and legislation. The last is imperative; even the best of us cannot be counted on to pay our income taxes on a personal voluntary basis or, in China, to have only one child, even though we may fully agree in principle that it is the morally right thing to do for the common good.

In totalitarian states implementation only requires convincing the leaders in power who then issue government edicts along with supportive propaganda. In democracies the mind of the voting majority must be persuaded. From an outerspace perspective it would seem a small, relatively painless thing that earthlings, in order to save themselves and the planet, should modify some of their widely varied, often mutually exclusive and contradictory, beliefs. The human psyche is such, however, that this becomes a prodigious task. Even so, there is good reason to think that the envisioned value-belief adjustments would occur spontaneously in the course of time under ordinary conditions as the truth of the new paradigm gradually became disseminated.

The trouble is that world conditions are far

from ordinary. The state of the biosphere is already being irreversibly degraded. Further delay means that any recovery will be increasingly difficult and the residual quality of the biosphere increasingly worse. With toxic waste clean-up already estimated in the tens of billions in the U.S. alone, runaway population still uncontrolled in a world where 80 million suffer from starvation and 12 million children under 5 die each year, and where a nuclear release is capable of finishing everything at any moment (one could go on), any delay whatever becomes at best a serious set-back. The summary of the human predicament by Woody Allen: "mankind faces the crossroads . . . one path leads to despair and utter hopelessness, the other to total extinction. I pray we . . . choose wisely." was not all humor. Nor is it, we think, so hopeless. There is a way out.

To see a promising solution to the dilemma and then to just leave it to questionable development at its own pace without trying to aid its implementation would seem a dereliction. Effective implementation, however, becomes a large part a matter of public persuasion and campaigning beyond the expertise of the scientist. To change societal values and ways of thinking is something for the media, promotional experts, lobbyists, educators, institutions and foundations, perhaps television charisma and, always, financing. Philanthropic individuals and foundations would have to be sought who might be willing to raise their aim beyond the usual 'humanitarian' goals to the more distant horizons of this paramount 'cause' of all causes which, should it fail, all others go with it.

The Institute presented its annual awards for the best problem-solution paper of contemporary philosophy. This year's grand award was presented to trustee Professor Emeritus Roger W. Sperry of California Institute of Technology for his elucidation of "The Human Predicament: A Way Out." Prof. Sperry's honors include twenty-six other awards, including a number of honorary doctorates and a shared Nobel Prize in medicine/physiology.

Response on receiving the Annual Award of The Institute for Advanced Philosophic Research, August 18, 1986.

Thank you, Prof. Hawkins, Prof. Koenig—everybody. I just want you to know that, to me, this award is very special—more valued than if it were coming from science. The reason in part, I suppose, is the general one that in doing philosophy one tends to put more of one's personal self on the line than in science.

But more especially in my case, it means some much needed personal reassurance and heartening reinforcement for a continuing battle I wage with my scientific colleagues who keep telling me to "quit wasting my time with this philosophic stuff." "Get back to science!" they tell me.

This has been going on for over 10 years now, ever since I decided it was more important to follow up certain philosophic developments in our work than to continue giving priority to experimental science.

Despite all the disparagement, my own convictions about this decision remain unchanged. To me it doesn't matter whether it's philosophy or whether it's science. What counts is *what difference do the answers make*. And in today's world, the great need seems to be, not so much for more answers in science but for some new *philosophy*: quality survival would seem to request some new attitudes, new perspectives, new values and beliefs by which to live and govern. Or, as some might put it, new ways to preserve the old.

If Alfred Nobel were alive today, and setting up prizes for human benefaction, he might well think less in terms of physics, chemistry, physiology, medicine, etc. than in terms closer to philosophy—like his peace prize maybe recognizing advances bearing on world population controls, preserving the environment, world security in the face of nuclear developments, species rights, terrorism and such like.

Anyhow, I am deeply pleased and honored and thank you very much.—*Roger Sperry*